

Thursday November 11, 2010

Weather: 40-50F, clear skies

Arrive at Mountainview Park and organized supplies. Team AmyMarie Accardi Dey & Shane McDonald

Calibrate Trimble Geo XT 10:44am

Corner Third/Cap 193720.63mN

150626.35mE

Corner Second/Cap 193721.34mN

150688.09mE

NJ State Plane - NAD83 - in meters

Objective: walk downstream from Third/Cap to confluence with Green Brook.

* brook bed gravel with fine sand and silt entrance of Third/Cap

TIPI debris in river gree creates pool with fine sediment on upriverside

TIPI 193625.26mN

150659.52mE

water depth varies between 6" and 2ft
Picture #1

AM
11/11/10

Debris in brook changing river
flows and creating sandy patches

Pennoni stake #1020 193624.37mN
150618.22mE

shopping cart by stake 1020
creating deposition - too much
leave debris prevents sampling

TIP2 downriver of stake 1020
large tree protruding into stream
deposits on backside

TIP2 193629.07mN
150574.02mE
Picture #2 (408)

gravel bed with fine sand - patches
of sand in brook due to change
in river velocity

TIP3 old discharge pipe - deep pool
greater than SFT water

TIP3 193637.75mN
150577.30mE
Picture #3 (407)

banks of brook muddy, soft with
lots of leaves - flood plain full of
stick debris

Pennoni stake 1018

fallen tree across brook creates
a deep pool with soft muck and
leaf debris Picture #3 (406)

TIP4 193653.98mN
150457.67mE

downstream of fallen tree - cobble deposits
with gravel

TIP5 193661.65mN Picture #5
garbage can 150405.95mE

debris caused deposition - very
fine grained possibly has bacteria
growing (Picture #6 close-up)

Water depth drops from 6 inch to 2 ft
deep with pool of mucky just
downstream of debris

MAD
11/1/10

TIP6 193692.30mN Picture #7
150373.47mE

fallen tree across brook - old log jam
creating mound on back side with
fine grain deposits
* can sample in middle of brook

Ripple location Picture #8

3 inch to 8 inches deep
moving 1ft/sec, upstream of ripples
but downstream of TIP6 good location
for stream flow survey

Another super shallow location (2" water)
flow focus on north bank through
thalweg

Fallen log - with deep pool 2 1/2 ft on
back side - flood event eroded
banks and disturbed location
↳ bed gravelly and eroding banks
causing steep banks

TIP7 Staff gauge 193692.3mN
150373.47mE
193809.43mN
150250.60mE

across from staff gauge - little ditch
appears to be a small seep - low flow
plant growth present in seep water
Residential area - dead end
Rock Lane & 7th Street
May be an old drain - water is
turbidity with bacteria growing.
Perennial evergreen (ground-water
living) evergreen growing on bottom.
As water enters brooks, high turbidity.
May be moving floodplain soils

Riprap at stake 1014 - brook
deep 2 1/2 ft/sec (next to condominium)

TIP8 193812.07mN three pictures
150207.36mE (400-398)

Just downstream of staff gauge - old
weir made of rip rap. On south side
of brook, large island with deposits
on back side of debris > 4" of water -
brook make sharp turn north Picture 397

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8
Pennoni stake 1012
ripples 2 inch water, cobble bottom
stable bed with moss growing on
cobbles

Two pipes crossing brook upstream
of Bound Brook Road Bridge.

* Staff gauge #2 located on Bound Brook
Road Bridge ^{down} ~~up~~ stream side

No visible depositional locations near
bridge.

Shallow water cobble bottom on
downstream side of bridge.

School of fish present in brook
Mallards and great blue observed in brook
Deer present on banks
Clamshell remains on banks

9
TIP9 riprap debris upstream of
residential house embankment. Pool of
water about 2ft deep

TIP9 194084.78 mN
149973.08 mE
Picture 394

Homemade dam next to residential
embankment - gravel placed on banks -
near end of road. Storm outfall not
flowing - downstream of stake 1007

Stake 1007 - deep water \approx 3ft
sediment fine grained

TIP10 194198.08 mN
149982.82 mE
debris (cement blocks) downstream
caused fine-grained sediment deposits
Picture 393-392

Thalweg - with fast flow focus on north
side of brook

AAO
11/1/10

seep & potential site

T1P1 1942095.06 mN
149871.27 mE

Potential GW seep on north side of
bank perennial evergreen on bank
Picture 392

Fine grain material for long stretch
no gravel present / methane bubbles
percolating in SW

T1P2 Tree stump with debris in middle
of brook - still in fine grained area

T1P2 194350.16 mN
149833.78 mE

Picture 391

Stake 1003 at confluence with
Green Brook

~~T1P1P2~~ GC check on GPS unit
194458.61 mN
149757.44 mE

Lunch Break

3:03pm start survey at dam in New Market
Park and walk down river to Cap Lane

T2P1 New Market Pond Dam by railing in Park
193511.11 mN
153546.76 mE

New Market Pond from dam and under bridge
and a good 50m after bridge RIPRAP
slippery due to bacteria, moss, and
fine grained deposits

≈ 15°

T2P2 - outcrop of Passaic shale / dipping NW
sandstone / mudstone / shale
south bank - downstream of New Market

193525.35 mN
153321.22 mE

no visible signs of GW seeping
exposed for length 200ft and 10ft on bank
- strong set near vertical and striking eastward

RAD
4/1/10

T2P3 debris field upstream of bridge

193528.03mN

153243.46mE

~~T2P4~~

T2P4 GW discharge location and potential sand boil with bacterial blossom

193534.35

153209.55

present along north bank

Brook makes sharp turn - outcrop Passaic shale present on north bank
no visible GW seep

steep bank - parking lot on top

T2P5 193570.96 mN

153149.13 mE

rip rap and gravel bottom - difficult to walk

→ 2 dams located in brook
potential sampling location in delta

Picture

T2P6 drum and tar seep

193549.62mN

153079.60mE

tar looks like it was liquid recent - but now hard. tank visible in bank

T2P7 unnamed tributary

potential sampling in delta

193531.49mN

153066.34mE

GW discharge at head of unnamed tributary
Picture 383 - iron reducing bacteria bloom
rate at end of tributary is dry - signalling
GW discharge along length

* island delta just downstream of tributary delta is a mound of fine grained

T2P8 GW seep on bank (small fumes from

193463.24

factory)

153015.72

ADD
11/1/10

T2P9 Bedrock Passaic shale
with GW seepage at base
193440.48
152977.44

Picture 381 Passaic shale

observe Kingfisher birds

T2P10 GW seep just downstream
of riprap/dam and discharge pipe
193461.94 mN
152915.52 mE

on road GW discharging is clouded/turbid
- also silty deposit in GW bend on
north bank/potential sample

water depth much shallower 6-8 inch
more easier to move - still lot of
debris and garbage

Passaic shale outcrops continue along bank

Peroni 5030 stake
↳ GW discharge on bank - seepage
at ~~base~~ stake

Passaic shale at crop continues on
south bank

T2P11 Picture 379 → wetland present
tributary from industrial complex
water flowing } GW discharge
iron bacteria bloom }
193594.27 mN
152727.53 mE

good location for stream flow survey
- just downstream of industrial
tributary

sediment mixture of fine grained and
sand but we are out of cobbles

↙ stake 5029 - south bank - silty
deposits - another location

map
11/1/10

↘ No more visible Passaic shale at crop

T2P12 Still water - mound of
- deposition in middle of channel
- also GW seepage on north side

193750.08 mN

152996.83 mE

- RR track on north side
- brook bends downstream of
depositional location

good HRC location T2P12

on south bank of T2P12 - small
tributary that connects to residential
area

Penman

QC check 5031 193784.41

152582.72

Brook does sharp bend

Leigh Ave deadend - sharp Z bend
in brook - very fine material.
good location for sampling

4:45 pm end day

Summary of Photos

- 1 T1P1 debris sample 26 X
- 2 T1P2 debris sample 27 T2P4 GW discharge
- 3 T1P3 sample 28 }
- 4 T1P4 sample 29 T2P6 tar
- 5 } T1P5 sample 30 X
- 6 } T1P6 sample 31 T2P7 tributary
- 7 T1P6 sample 32 T2P7 GW
- 8 ex of ripples 33 X
- 9 } T1P7 staff gauge 34 X
- 10 } T2P8^{pg} outcrop GW
- 11 GW seep T1P7 36 }
- 12 } T1P8 weir 37 T2P11 industrial tributary
- 13 }
- 14 }
- 15 sharp turn at T1P8
- 16 pipes
- 17 } staff gauge on bridge
- 18 }
- 19 }
- 20 } T1P10 sample
- 21 }
- 22 T1P11 sample/GW
- 23 T1P12 sample
- 24 T2P2 outcrop
- 25 }

ATD
4/1/10

November 12, 2010

Weather - cold/crisp

8:10am meet at South Plainfield Recycling Center

GC fence post 192326.85
at recycle center 158184.31

T3P1 start transect #3 at intersection
of tributary and Bend Brook
192399.19
158262.29

bottom bcks very soft with growth on
bottom of brook - water very still

GW discharge on westbank adjacent
to recycle facility all along bank of T3P1

T3P2 head of GW discharge
192397.08
158239.92

Picture of GW discharge - note that a stake
was placed where GW enters brook

Picture 38, 39, 40

T3P3 192408.77
158226.90

end of GW discharge area
(seeps or springs)

T3P4 another large GW discharge with
delta into brook - bottom too soft to
192433.42 traverse
158191.77

Picture 41

T3P5 another large GW discharge
bottom on brook still non-wadable
192533.05 Picture 42
158169.16

Water flow VERY slow ≈ 6 in/sec

We can see GW on east side of bank -
wetland present on opposite bank

Multiple buried drums exposed

MAD
11/12/10

T3P6 enter brook solid bottom!
 GW discharge on east bank
 192559.75
 158169.57

More walkable in GW discharge wetland

Water barely moving - water ponded
 bottom too soft - walking on banks

T3P7 beaver dam
 192704.88
 158198.58

Mucky tributary - cannot cross
 went around and saw source → discharge
 pipe running under road Picture 44

→ evidence of old bridge

T3P8 natural occurring bedrock / dam^{riprap}
 flow quickly moving downstream -
 ponded water upstream
 193063.09
 157956.75

Picture 47-48 bedrock outcrop at dam
 Picture 45-46 dam with flow

T3P8 appears to be natural boundary
 in Bound Brook - upstream of T3P8
 is ponded, still water

T3P9 193113.94 QC Belmont Bridge
 157915.42 SE Corner
 near Metchem

Picture 49-50 view of bedrock dam
 from Belmont Bridge

Start next tract - start at Oakmoor
 and walking back to Belmont Bridge

T4P1 194161.13 QC
 156795.21
 QC point at end of Oakmoor Lane

T4P2 confluence with Cedar - sediment
 194016.61
 156718.06

Beaver dam down river of confluence
 causing extensive ponding and flooding

KAD
 1/1/10

T4P3 beaver dam 194015.04
156669.16

down river of dam is gravel and hard
bottom / up river of dam mucky

Follow Bound Brook upstream -
bottom is solid but water 3ft deep
↳ fine sand/silt

Walk on banks

several fallen trees

T4P4 GW discharge - pushes leaf
debris away - discolor water

193992.32
156761.8

Picture 52 - large debris field behind
upstream of fallen logs.

Enter brook upstream of debris field
fine sand/silt bottom - hard bottom
2ft deep water

T4P5

Silt mound delta down river of tree snag

AND ~~193992.32~~ 193995.27
156823.44

Picture 53

second debris field on north side of bank
with shopping carts and drums

Bottom becoming very soft and difficult
to wade - areas of "silt packets"
cannot wade - need to go on banks

evidence of clams ~~at~~ on bottom
↳ bioturbation

another fallen tree

water depth < 1ft
bottom hard (except soft banks)

T4P6 debris (pipe & buried log) create
fine grained deposit for sampling

193962.91

156982.60

surrounding bottom is gravel and hard

AND
9/2/10

Keep experiencing change water depth
between 6" and 2ft - sandy/gravel
bottom

T4P7 193876.2 manmade dam
157076.6

↳ good sampling location
dam made of cement - extends
brook width - 2ft tall

hde in fence to playground right
next to dam - monitoring well
right next to dam ↳ in playground

two fence openings

T4P8 bedrock outcrop - south bank
red fine grained sandstone and shale
193821.85
157160.48

100ft extending on south side bank

T4P9 bedrock outcropping on brook
bed - small/hard cliff in water
can feel bedrock with feet

193792.81

157214.68

much easier to walk - very shallow

very shallow and riprap under
overpass bridge - but gets deep on
upstream side of overpass

County Rt 603

Picture 58 off riprap under overpass

CSO located on upriver side of overpass

After overpass, water depth drops to
2-3ft and then there is another
riprap debris pile under an industrial
walking bridge (banks made of concrete)

cement blocks and debris

MAD
4/2/10

T4P10 staff gauge upstream of
walking bridge

193764.94

157428.97

⊗ Came out of Creek on Hamilton Blvd
next to South Plainfield Office of
Emergency Management to get over
debris field

T4P11 bed rock outcrop forming
bottom of bound brook

193733.28

157472.9

T4P12 tributary entering bound brook
next to RR bridge. Tributary enters
as a culvert

193708.39

157495.81

rip rap bottom in tributary and under
RR bn

Rocky-cobble bottom as we approach OQ2 site

Another RR bridge - water forced
through two culverts - good flow
measurement location. Culvert full
of riprap and large rocks

Picture 64-65

T4P13 193519.8

157557.57

Industrial discharge pipe just
upstream of RR culvert

Picture 66-67

RR tracks on north bank

OQ2 site on south bank

bottom cobble and rocky (no riprap)

T4P14 193461.8 staff gauge

157578.05

GW seep coming off OQ2 site
silt fence and staff gauge at discharge
location

ADD
1/13/10

bedrock outcrop on north bank
opposite T4P4

Another set of culvert (old RR bridge)
in rap bottom - located @ near
upstream edge of CR2

T4P5 Top of culvert - end transect
upstream of culvert water too deep
and phragmites on both banks

193370.3
157621.81

Decide to exit following CR2 fence line
to Spice Road and follow back to Belmont

Picture T5-71 tributary & culvert
where we exited

T4P5QC - On top of culvert on Spice Ave
193165.42
157598.65

Track 5 - Park at Clinton Ave and walk
upstream to Oakmoor Avenue

T5P1 QC Clinton Ave bridge SE corner
194150.31
155903.98

soft bottom in middle of channel
upstream of Clinton Ave Bridge - difficult
to walk - need to walk on banks

Sediment sample available in channel
and under bridge

T5P2 hard bottom enter creek here
194065.03
156121.40

bottom is fine sand / silty deposit
good sediment sampling
→ gets too soft / turn back / stuck in mud

little farther down by ~~barking~~ dogs you
can enter

TSP3 little tributary - can enter
brook, solid bottom - fine sand

194033.19

156231.26

tributary water flowing well
tributary continues back into wetland
GW seepage from wetland

brook gets very shallow - 4 inches
and then hit deep pond - need to
go around

Picture 72 - Amy Marie upstream of
Clinton Bridge near TSP3

good sediment along this stretch -
fine silt bottom

Picture 73

TSP4 unnamed tributary on south bank
fine sand/solid bottom

194014.39

156373.24

sampling available - fine sands on
point bar

water shallow upstream of tributary

GW seepage on both sides of Band
Brook just upstream of unnamed
tributary

TSP5 GW head spring

193999.78

156396.16

GW seepage from GW wetland

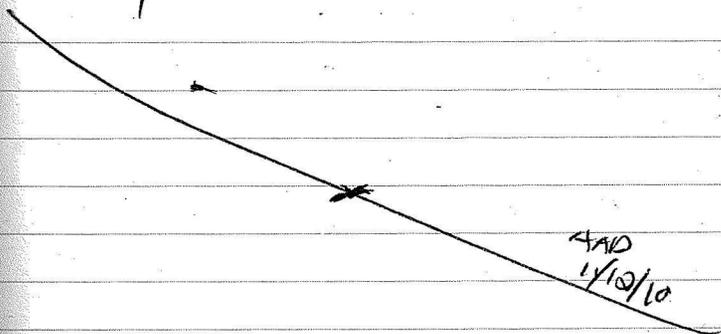
Picture 74

194018.33

156508.37

Very shallow - coars sand/solid bottom
sand bar present in brook
sediment sample on tail end

3:30pm exit at Oakmoor Lane
end day



Summary of Photos on Nov 12

- 38 } T3P2 GW
 39 }
 40 }
 41 T3P4 GW
 42 T3P5 GW
 43 T3P7 beaver dam
 44 Tributary/discharge
 45 }
 46 } T3P8 bedrock dam
 47 }
 48 }
 49 }
 50 }
 51 T4P3 beaver dam
 52 T4P4 debris field
 53 T4P5 debris field
 54 T4P6 sediment in old pipe
 55 dam T4P7
 56 ↳ access to dam
 57 T4P8 ~~beaver~~ bedrock
 58 Rip rap County RT 603
 59 }
 60 }
 61 }

- 62 } T4P12 tributary
 63 } culvert
 64 } RR bridge culvert
 65 }
 66 } industrial discharge
 67 }
 68 T4P14 OU2 seep
 69 culvert at OU2 T4P15
 70 } tributary on Spicer
 71 }
 72 T5P3 near Clintons
 73 T5P4 tributary
 74 T5P6 GW discharge